

**Meeting of the Central Valley Flood Protection Board
October 28, 2010**

Staff Report – Encroachment Permit

**City of Chico
Bridge Widening, Butte County**

1.0 – ITEM

Consider approval of Permit No. 18632 (see Attachment B)

2.0 – APPLICANT

City of Chico

3.0 – LOCATION

The project is located in Chico on State Route 32 just east of Forest Avenue.
(Dead Horse Slough, Butte County, see Attachment A)

4.0 – DESCRIPTION

The applicant proposes to widen existing bridge by 49-feet to the north side, for a total width of 81-feet, the new section will be approximately 124-feet-long supported by two abutments and 3 piers, each consisting of 10 rows of 15-inch-diameter pre-stressed driven piles across Dead Horse Slough.

5.0 – PROJECT ANALYSIS

The proposed bridge widening by 49 feet to the north (upstream on Dead Horse Slough) will not have a significant impact to flood flows in Dead Horse Slough which is a tributary to Little Chico Creek. The new portion of the widened bridge will have a soffit elevation of 240.7 feet which is equal to the existing bridge soffit. This provides 2.74 feet of freeboard at 100 year design event which exceeds the 2 feet of design freeboard required on minor streams. The new widened bridge piling will be installed in line with the existing bridge piling.

5.1 – Hydraulic Analysis

A Bridge Design Hydraulic Study, completed by Wreco, Inc. in 2006, concluded the scour and hydraulic impacts of this proposed bridge were negligible. A summary of this study is included with this staff report (see Attachment C).

6.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with this project, from all pertinent agencies are shown below:

- The U. S. Army Corps of Engineers 208.10 comment letter has not yet been received for this application. Upon receipt of a favorable letter and review by Board staff it will be incorporated into the permit as Exhibit A.
- There is no non-federal maintaining agency for this project.

7.0 – CEQA ANALYSIS

Board Staff has prepared the following CEQA findings:

The Board, acting as a responsible agency under CEQA, has independently reviewed the Draft Environmental Impact Report (DEIR, February 2007), Final Environmental Impact Report (FEIR, May 2010), and the City of Chico Resolution No. 39-10, July 6, 2010 (which includes a Statement of Facts, Findings, and Mitigation Measures, Statement of Overriding Considerations, and Mitigation Monitoring Program) for the State Route 32 Widening Project: State Route 99 to Yosemite Drive (SCH No. 2007022045) prepared by the lead agency, the City of Chico. The Notice of Determination was filed with the State Clearinghouse on July 12, 2010. These documents, including project design and City resolution, may be viewed or downloaded from the Central Valley Flood Protection Board website at <http://www.cvpfb.ca.gov/meetings/2010/10-28-29-2010agenda.cfm> under a link for this agenda item.

Impacts that can be Mitigated

The following are the significant impacts and the mitigation measures to reduce them to less than significant:

- Aesthetics and Visual Resources: Glare and light will be reduced per current Caltrans and City requirements.
- Geologic Resources: The project proponent will conform to the conclusions and recommendations of the final foundation investigation and final geotechnical report

as they relate to structural sections, earthwork, sound walls and drainage design and construction of Dead Horse Slough bridge to mitigate potential geologic and soil constraints issues. The project proponent shall submit and obtain approval of an erosion control plan from the City of Chico to address soil loss in accordance with City requirements.

- Hazards and Hazardous Materials: The project proponent will develop and implement a spill prevention and control program to minimize the potential for, and effects from spills of hazardous, toxic or petroleum substances during construction of the project.
- Utilities and Service Systems: The project proponent will require the utility crossing at intersections along SR-32 be constructed on an as-needed basis, as determined by the various service providers, resulting in no disruption of services during and after construction.
- Hydrology and Water Quality: Implement construction-related and permanent post-construction Best Management Practices according to the Caltrans Storm Water Quality Handbook and the Storm Water Pollution Prevention Plan (SWPPP) to retain and treat wastewater.
- Biological Resources: Prior to construction, conduct a biological resources education program for construction crews and enforce construction restrictions. The project proponent will provide enforcement of specified construction regulations, installation of barrier fencing adjacent to the construction zone, biological monitoring, implementation of a number of specified construction requirements in regard to work which may impact trees, and the purchase of mitigation credits at a wetland mitigation bank.
- Air Quality: Fugitive dust and emissions during construction will be controlled with best available measures so that the amount of such dust and emissions are reduced, as required by Butte County Air Quality Management District.
- Noise: Implement equipment noise reduction measures in compliance with the City of Chico's noise ordinance.
- Cultural Resources: Work shall be stopped in affected areas if cultural resources are discovered during project construction and appropriate measures will be implemented. The lead agency will consult with a qualified archaeologist or paleontologist to assess the significance of the find. If any find is determined to be significant, representatives of the project proponent and/or lead agency and the qualified archaeologist and/or paleontologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation. All significant cultural materials recovered will be recorded or described in a professional report and submitted to the Northeast Information Center at California State University (CSU) Chico.

- **Transportation:** The project proponent will mitigate for construction-related traffic delays by requiring the contractor to prepare and implement a Transportation Management Plan (TMP). TMP strategies include Construction Zone Enhanced Enforcement Patrol, lane closures, and maintaining traffic.

Based on its independent review of the DEIR, FEIR and the City Council of the City of Chico Resolution 39-10, the Board finds that for each of the significant impacts described above, changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Significant Unavoidable Adverse Impacts of the Project

- The short-term impacts of the removal of native trees from the project area;
- Degradation of the existing visual character or quality of the site and its surroundings;
- Permanent changes to the views along SR 32 between SR 99 and El Monte Avenue; and
- Permanent changes to views along SR 32 between El Monte Avenue and Yosemite Drive.

The Board finds that the specific economic, legal, social, technological or other benefits of the project, as listed above, outweigh the unavoidable adverse environmental effects, which are thus considered to be “acceptable.”

Statement of Overriding Considerations

The City Chico of adopted Resolution 39-10 including the Statement of Overriding Considerations. The Board concurs with this Statement.

The Board has independently considered the significant and unavoidable environmental impacts of the proposed project. The Board has also considered the benefits of the project, including improving the safety and traffic operations within the project limits. Widening of SR 32 is needed to prevent higher accident rates in the project corridor. Under current conditions, comparing accident rates at this location to statewide rates for similar roadway segments indicates that accident rates are above the statewide average for the SR 99 southbound on-ramp from SR 32 and the SR 99 northbound on-ramp from SR 32. Additionally, the Forest Avenue/SR 32 and Bruce Road/SR 32 intersections experience higher than average accident rates. The project is necessary to prevent future accidents that would be expected to occur as greater delays are experienced as planned growth occurs. Widening of SR 32 is also necessary to provide additional capacity to avoid unacceptable levels of service and circulation that would occur with growth and development previously approved in the City of Chico General

Plan. The Board finds that economic, legal, social, technological, or other benefits of the proposed project outweigh the unavoidable adverse environmental effects of the project, and the adverse environmental effects are considered acceptable when these benefits of the project are considered.

The documents and other materials which constitute the record of the Central Valley Flood Board's proceedings in this matter are in the custody of Jay Punia, Executive Officer, Central Valley Flood Protection Board, 3310 El Camino Ave., Rm. 151, Sacramento, California 95821.

8.0 – SECTION 8610.5 CONSIDERATIONS

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department or other parties that raise credible scientific issues.

The accepted industry standards for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit.

3. Effects of the decision on the entire State Plan of Flood Control:

The bridge over Dead Horse Slough is an existing structure and the proposed widening of the bridge will have no impacts on the State Plan of Flood Control.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

Effects from future events that increase flows in Dead Horse Slough may require that the bridge be reconstructed to accommodate larger flows.

9.0 – STAFF RECOMMENDATION

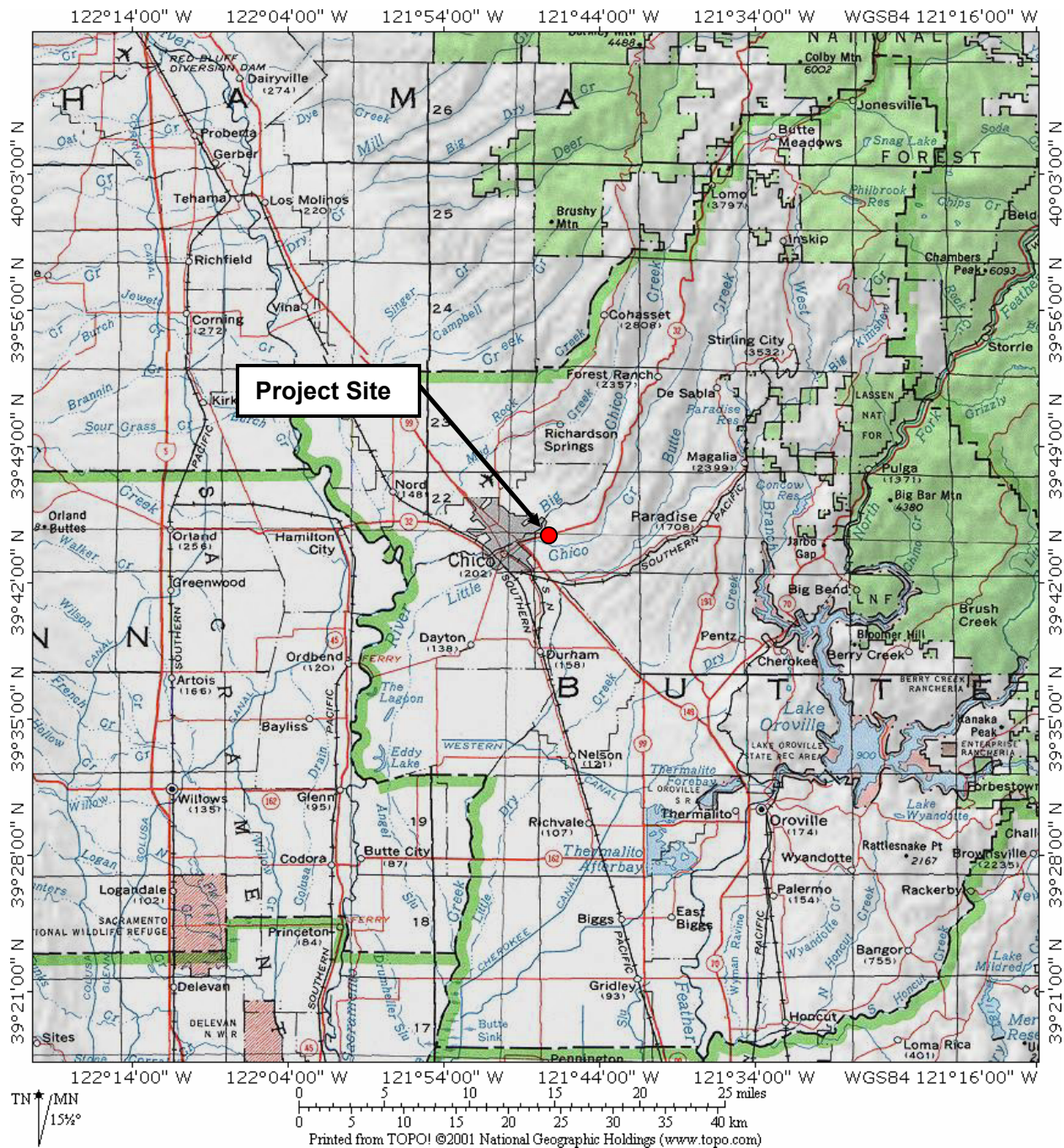
Staff recommends that the Board adopt the CEQA findings, approve the permit conditioned upon receipt of a favorable U.S. Army Corps of Engineers comment letter and direct staff to file a Notice of Determination with the State Clearinghouse.

10.0 – LIST OF ATTACHMENTS

- A. Location Maps and Photos
- B. Draft Permit No. 18632
- C. Hydraulic Summary Table

Design Review:	Steve Dawson / Jon Tice, P.E.
Environmental Review:	Andrea Mauro / James Herota
Document Review:	Gary Lemon, P.E. / Len Marino P.E.

SR 32 Widening at Dead Horse Slough and South Fork Dead Horse Slough City of Chico



<h3>Project Location Map</h3>	<p>FIGURE 1</p>
<p>SR 32 Widening at Dead Horse Slough and South Fork Dead Horse Slough</p>	<p>August 2006</p>

SR 32 Widening at Dead Horse Slough
and South Fork Dead Horse Slough
City of Chico

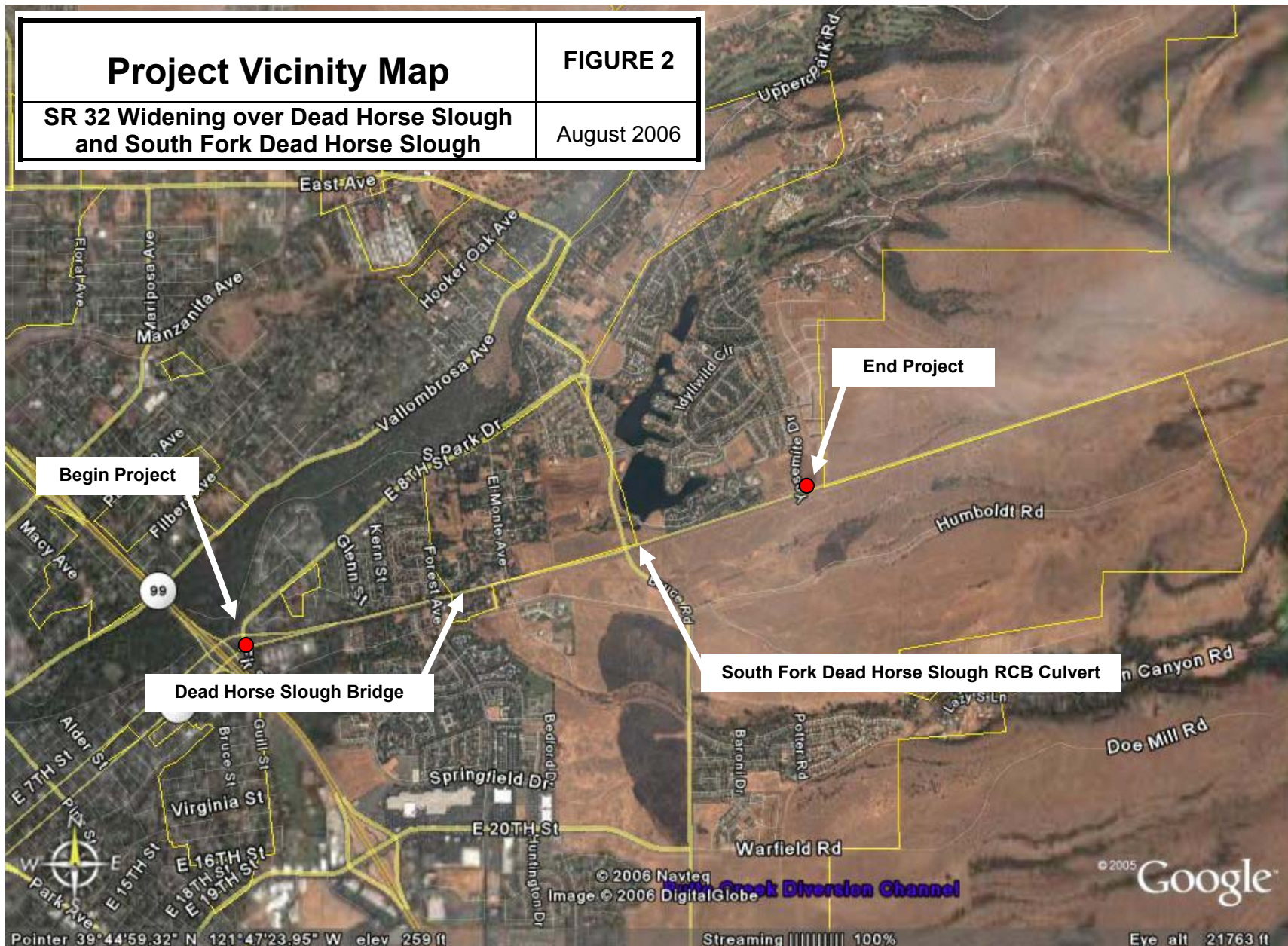




Photo 1: SR 32 Bridge Over Dead Horse Slough (Looking East)



Photo 2: SR 32 RCB at South Fork Dead Horse Slough (Upstream Face)

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DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY
THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 18632 BD

This Permit is issued to:

City of Chico
PO Box 3420
c/o Bob Greenlaw
Chico, California 95927

To widen existing bridge by 49-feet to the north side, for a total width of 81-feet, the new section will be approximately 124-feet-long supported by two abutments and 3 piers, each consisting of 10 rows of 15-inch-diameter pre-stressed driven piles across Dead Horse Slough. The project is located in Chico on State Route 32 just east of Forest Avenue (Section 19&30, T22N, R2E, MDB&M, Dead Horse Slough, Butte County).

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

(SEAL)

Dated: _____

Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection

Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 18632 BD

THIRTEEN: All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Central Valley Flood Protection Board.

FOURTEEN: The permittee shall maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of the Department of Water Resources or any other agency responsible for maintenance.

FIFTEEN: The permittee shall contact the Department of Water Resources by telephone, (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 10 working days prior to start of work may result in delay of the project.

SIXTEEN: The permittee shall provide supervision and inspection services acceptable to the Central Valley Flood Protection Board. A professional engineer registered in the State of California shall certify that all work was inspected and performed in accordance with submitted drawings, specifications, and permit conditions.

SEVENTEEN: Upon completion of the project, the permittee shall submit as-built drawings to: Department of Water Resources, Flood Project Inspection Section, 3310 El Camino Avenue, Suite LL30, Sacramento, California 95821.

EIGHTEEN: The Central Valley Flood Protection Board and Department of Water Resources shall not be held liable for any damages to the permitted encroachment(s) resulting from flood fight, operation, maintenance, inspection, or emergency repair.

NINETEEN: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if damaged by any cause. If the permittee does not comply, the Central Valley Flood Protection Board may remove the encroachment(s) at the permittee's expense.

TWENTY: The permittee should contact the U.S. Army Corps of Engineers, Sacramento District, Regulatory Branch, 1325 J Street, Sacramento, California 95814, telephone (916) 557-5250, as compliance with Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act may be required.

TWENTY-ONE: The permittee shall be responsible for repair of any damages to the project levee and other flood control facilities due to construction, operation, or maintenance of the proposed project.

TWENTY-TWO: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California; including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The State expressly reserves the right to supplement or take over its defense, in its sole discretion

TWENTY-THREE: The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California, including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages related to the Central Valley Flood Protection Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

TWENTY-FOUR: If the project, or any portion thereof, is to be abandoned in the future, the permittee or successor shall abandon the project under direction of the Central Valley Flood Protection Board and Department of Water Resources, at the permittee's or successor's cost and expense.

TWENTY-FIVE: No construction work of any kind shall be done during the flood season from November 1 to April 15 without prior approval of the Central Valley Flood Protection Board.

TWENTY-SIX: All cleared trees and brush shall be completely burned or removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1 to April 15.

TWENTY-SEVEN: No material stockpiles, temporary buildings, or equipment shall remain in the floodway during the flood season from November 1 to April 15.

TWENTY-EIGHT: The new bridge shall have at least the same waterway area and vertical clearance as the replaced bridge.

TWENTY-NINE: The soffit of the bridge shall be no lower than that of the replaced bridge.

THIRTY: Bridge piers and bents placed within the floodway to support a widened portion of an existing bridge shall be constructed in line with the existing bents and piers.

THIRTY-ONE: Temporary staging, formwork, stockpiled material, equipment, and temporary buildings shall not remain in the floodway during the flood season from November 1 to April 15.

THIRTY-TWO: Trees, brush, sediment, and other debris shall be kept cleared from the bridge site and disposed of outside the floodway to maintain the design flow capacity and flowage area.

THIRTY-THREE: All fencing, gates and signs removed during construction of this project shall be replaced in kind and at the original locations. If it is necessary to relocate any fence, gate or sign, the permittee is required to obtain written approval from the Central Valley Flood Protection Board prior to installation at a new location.

THIRTY-FOUR: All temporary fencing, gates and signs shall be removed upon completion of the project.

THIRTY-FIVE: Backfill material for excavations shall be placed in 4- to 6-inch layers and compacted to at least the density of the adjacent, firm, undisturbed material.

THIRTY-SIX: Density tests by a certified materials laboratory will be required to verify compaction of backfill within the floodway and channel banks.

THIRTY-SEVEN: The permittee shall be responsible for all damages due to settlement, consolidation, or heave from any construction-induced activities.

THIRTY-EIGHT: In the event existing revetment on the channel banks is disturbed or displaced, it shall be restored to its original condition upon completion of the proposed installation.

THIRTY-NINE: All debris generated by this project shall be disposed of outside the floodway.

FORTY: The work area shall be restored to the condition that existed prior to start of work.

FORTY-ONE: In the event that bank erosion or channel scour injurious to the adopted plan of flood control occurs at or adjacent to the permitted encroachment(s), the permittee shall repair the eroded area and propose measures, to be approved by the Central Valley Flood Protection Board, to prevent further erosion.

FORTY-TWO: If the permitted encroachments result(s) in an adverse hydraulic impact, the permittee shall provide appropriate mitigation measures, to be approved by the Central Valley Flood Protection Board, prior to implementation of mitigation measures.

FORTY-THREE: The permittee shall comply with all conditions set forth in the letter from the Department of the Army dated October XX, 2010, which is attached to this permit as Exhibit A and is incorporated by reference.

Exhibit A

Army Corps Comment Letter

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Vegetation

Vegetation will be planted beneath the new bridge, and will consist of standard hydroseed erosion control.

Scour / Hydraulic Analysis

Scour and Hydraulic analysis was documented in a Bridge Design Hydraulic Study completed by Wreco, Inc. in 2006. A summary of this report can be found in the following tables:

Table 1 – Hydraulic Summary – Dead Horse Slough at SR 32

Design Flow Return Period	Design Flow (ft ³ /s)	Bridge Soffit Elevation (ft)	Water Surface Elevation (ft)	Freeboard (ft)	Velocity (ft/s)
200-year	2,200	240.7	238.49	2.21	5.72
100-year	1,900	240.7	237.96	2.74	5.45
50-year	1,500	240.7	237.24	3.46	5.07

**Table 2 – Potential Scour Depths for SR 32 Bridge Widening over Dead Horse Slough (Below
Grade)**

Location	Long-Term Bed Change	Contraction Scour (ft)	Local Scour (ft)	Total Scour Depth (ft)
Abutment 1	Negligible	0.32	3.31	3.63
Pier 2	Negligible	0.32	7.02	7.34
Pier 3	Negligible	0.32	6.68	7.00
Pier 4	Negligible	0.32	5.35	5.67
Abutment 5	Negligible	0.00	0.00	0.00

The foundation of the proposed bridge abutments and pile bents will be constructed below the calculated total potential scour to avoid structural damage and/or undermining. Further protection from scour and erosion will be provided by with rock slope protection (Light, Method B), and will be installed along the abutments. The rock slope protection will also be backfilled with hydroseed erosion control.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	But	32	10.14/12.65		

REGISTERED CIVIL ENGINEER

DATE

PO-KANG CHEN

No. S3112

Exp. 9/30/11

CIVIL

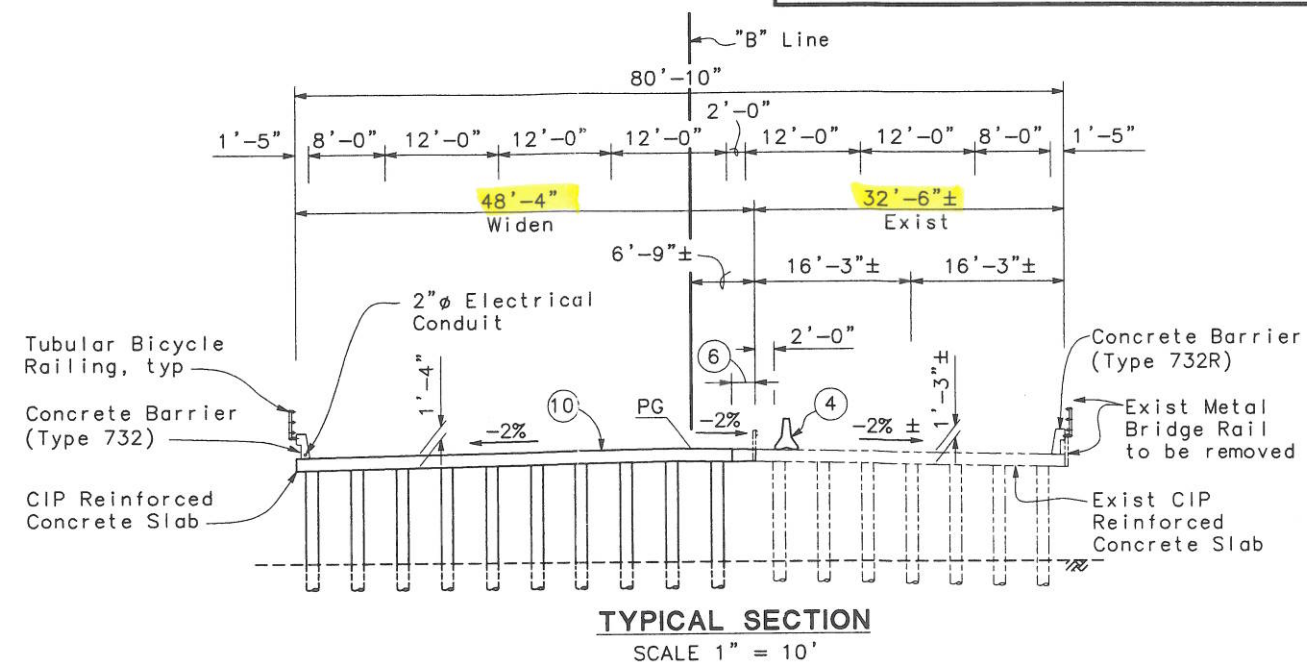
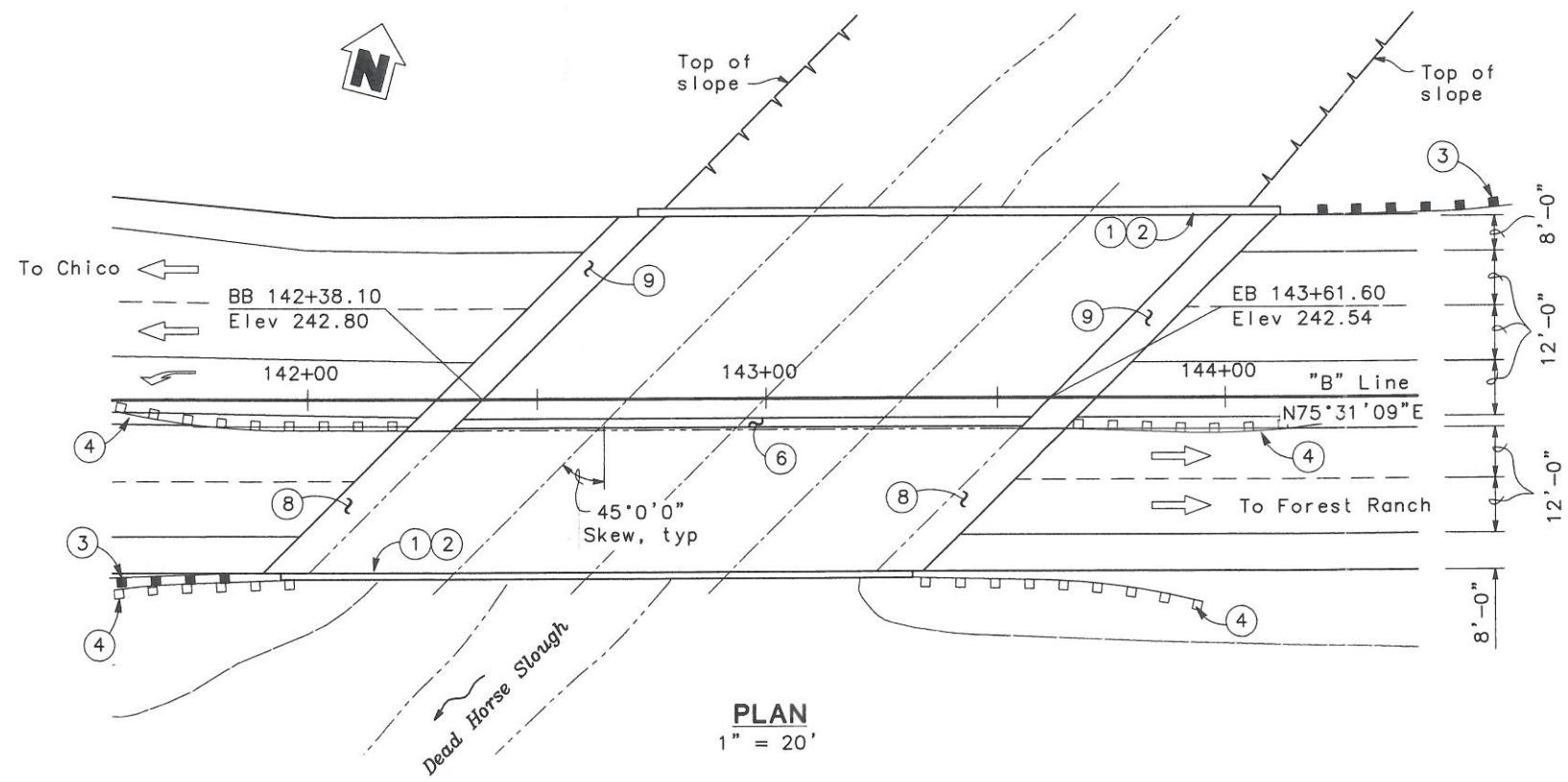
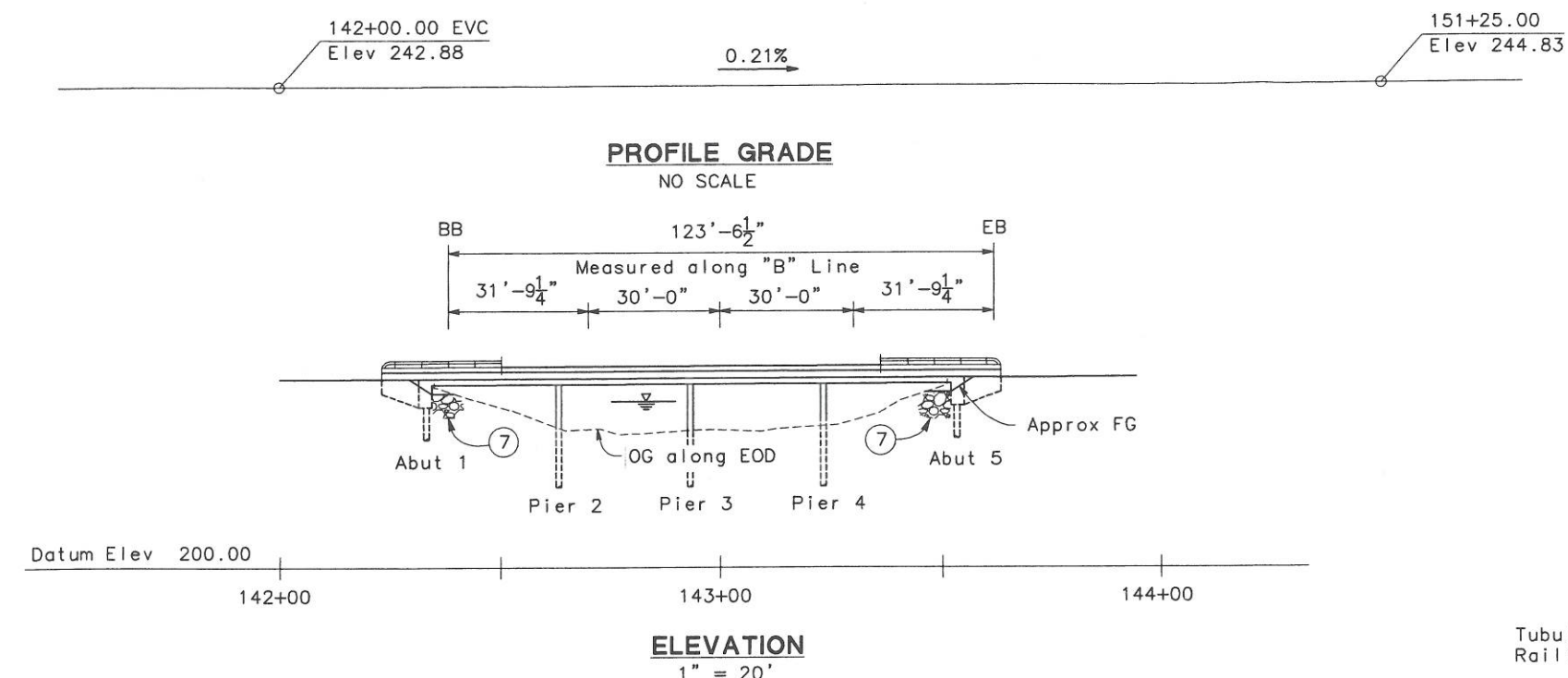
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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MARK THOMAS & CO., INC.
7300 FOLSOM BLVD STE 203
SACRAMENTO, CA 95826

CAPITAL PROJECT SERVICES
411 MAIN STREET
CHICO, CA 95927



- NOTES**
- ① Paint "Dead Horse Slough Br."
 - ② Paint "BR. NO. 12-0135"
 - ③ MBGR, see "Road Plans"
 - ④ Existing MBGR to be removed, see "Road Plans"
 - ⑤ Temporary Rail (Type K), see "Road Plans"
 - ⑥ 2'-6" Closure Pour
 - ⑦ Rock Slope Protection, see "Road Plans"
 - ⑧ Structure Approach R(10D)
 - ⑨ Structure Approach EQ(10)
 - ⑩ Clean and Treat Bridge Deck
- For Hydrology Summary, see "Foundation Plan" sheet.
- The Contractor shall verify all controlling field dimensions before ordering or fabrication any material.

LEGEND

----- Indicates Existing Bridge

Attachment C

DESIGN OVERSIGHT		DESIGN BY T. PHAM	CHECKED	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 12-0135	DEAD HORSE SLOUGH BRIDGE (WIDEN)	
DETAILS		BY G. BOYKO	CHECKED	LAYOUT BY E. WEEKS	CHECKED	J. PASSALACQUA PROJECT ENGINEER		POST MILES 11.08	GENERAL PLAN	
SIGN OFF DATE		QUANTITIES BY	CHECKED	SPECIFICATIONS BY	PLANS AND SPECS COMPARED	CU 03 EA 1E4901		DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET OF
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 08-01-09)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		FILE => \$REQUEST		09/21/09 03/18/10 04/14/10		X XX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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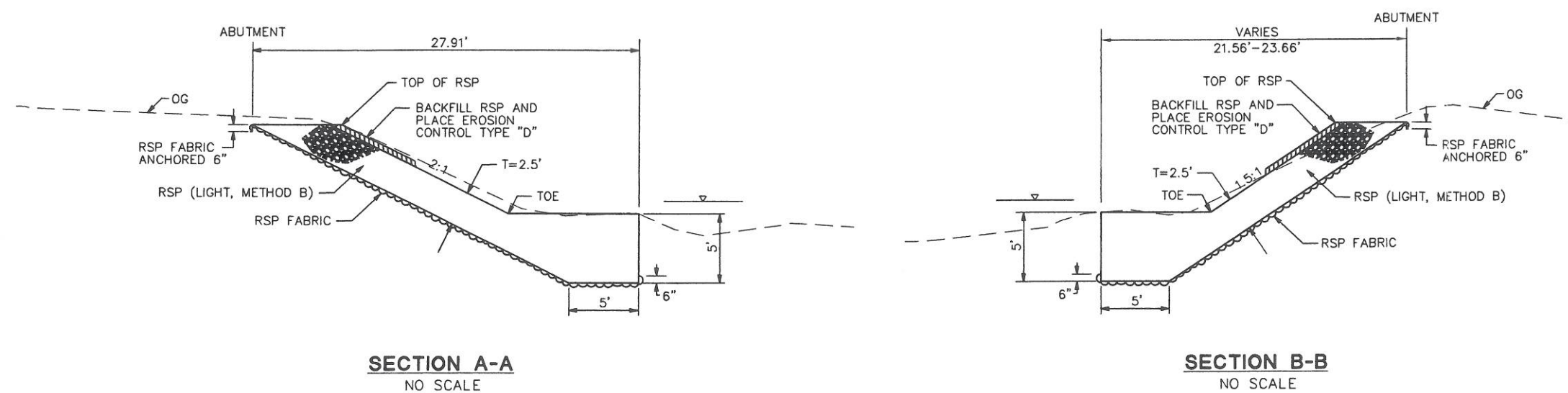
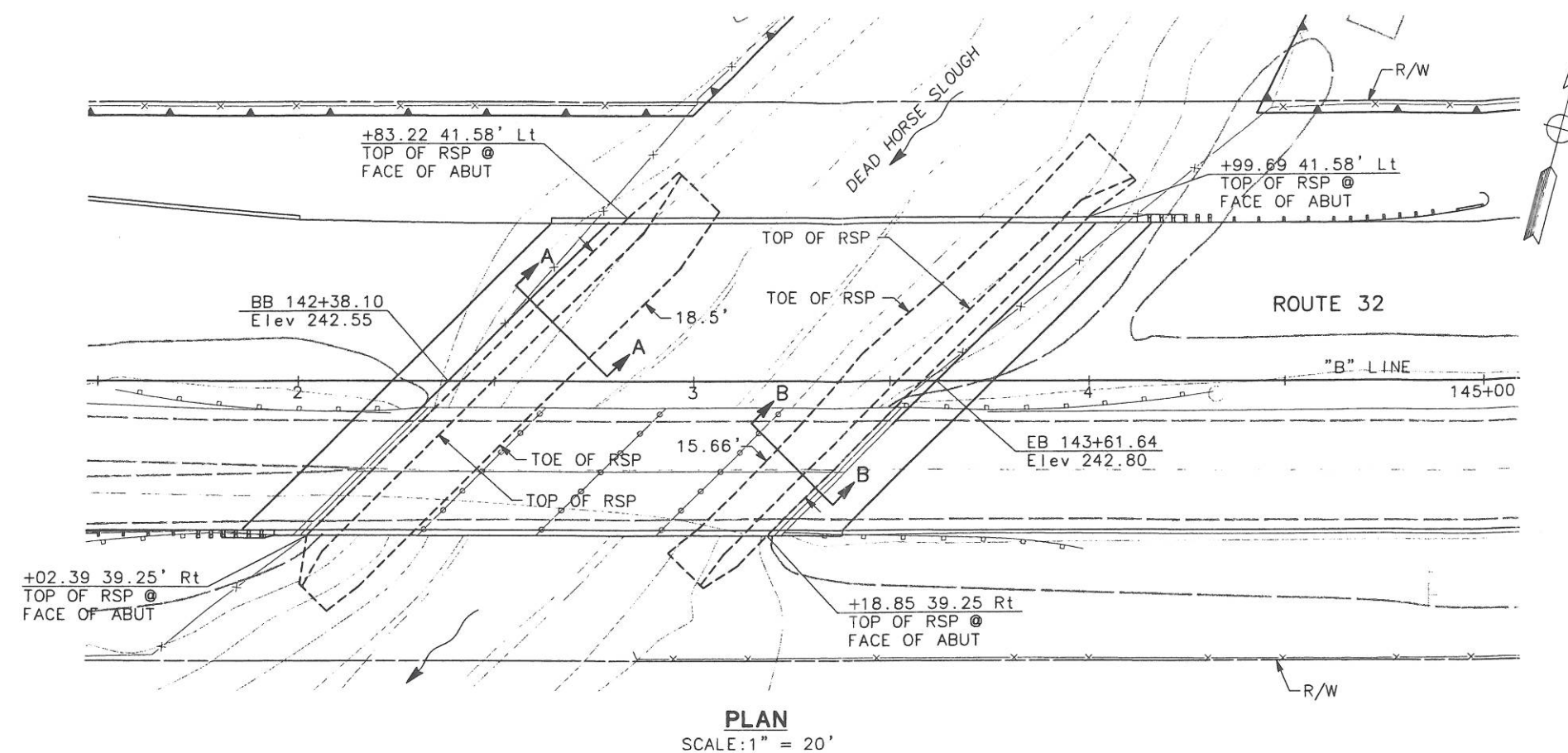
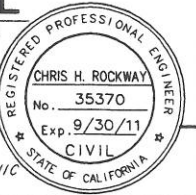
65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE / /

PLANS APPROVAL DATE

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OR AGENTS SHALL NOT BE RESPONSIBLE FOR
THE ACCURACY OR COMPLETENESS OF ELECTRONIC
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MARK THOMAS & CO., INC. 7300 FOLSOM BLVD STE 203 SACRAMENTO, CA 95826	CITY OF CHICO CAPITAL PROJECT SERVICES 411 MAIN STREET CHICO, CA 95927
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1 ROCK SLOPE PROTECTION DETAIL

Attachment C

DRAINAGE DETAILS

D-X

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